CLAIMS

1. A support body for supporting a substrate in a processing chamber, comprising:

a body having an upper surface;

a two-part coating disposed over the upper surface of the body, the two-part coating comprising:

a first coating layer extending a first radial distance from a center of the body, the first coating layer including at least one of a metal-containing material or alloy; and

a second coating layer disposed over the first coating layer, the second coating layer extending a second radial distance from the center of the body, the first radial distance greater than the second radial distance, wherein the second coating layer is non-metal; and

a stem coupled to the body, wherein the stem is configured to extend through an opening in a bottom of the processing chamber and wherein the first coating layer is also disposed on an outer stem surface.

2. The support body of claim 1, wherein the first coating layer is disposed over an entirety of the upper surface of the body.

3. The support body of claim 1, wherein the first coating layer is disposed over an entirety of the body, and wherein vertical sides of the body are free of the second coating layer.

4. The support body of claim 1, wherein the first coating layer is disposed over a substrate contact surface of the body and over an area of the body outside the substrate contact surface, and wherein the second coating layer is disposed over only the substrate contact surface of the body.

5. The support body of claim 1, wherein the second coating layer comprises a perfluorinated film.

6. The support body of claim 5, wherein the perfluorinated film comprises a self-assembled monolayer.

7. The support body of claim 1, wherein the first coating layer comprises electroless nickel plating, and wherein the second coating layer comprises silicon carbide.

8. The support body of claim 1, wherein the first coating layer comprises electroless nickel plating, and wherein the second coating layer comprises silicon.

9. The support body of claim 1, wherein the second coating layer comprises yttrium oxyfluoride.

10. A system comprising:

a processing chamber configured to clean a substrate, the processing chamber comprising:

a chamber body;

a lid assembly disposed at an upper end of the chamber body, the lid assembly comprising:

a dual channel showerhead having a first set of channels providing fluid communication above and below a plane of the showerhead; and

a second set of channels providing fluid communication with a side port of the chamber body; and

a substrate support assembly at least partially disposed within the chamber body, the substrate support assembly configured to support the substrate in the processing chamber, the substrate support assembly comprising:

a support body having an upper surface, the upper surface extending a first radial distance from a center of the support body;

a stem coupled to the support body; and

a coating disposed over the support body, the coating comprising:

a first coating layer disposed over an entirety of the upper surface of the support body, the first coating layer comprising electroless nickel plating; and

a second coating layer disposed over the first coating layer, the second coating layer extending a second radial distance from the center of the support body, the second radial distance less than the first radial distance, and the second coating layer comprising silicon carbide,

wherein the stem is configured to extend through an opening in a bottom of the chamber body and wherein the first coating layer is also disposed on an outer stem surface.

11. The system of claim 10, wherein the first coating layer is further disposed over vertical sides of the support body, and wherein the vertical sides of the support body and the outer stem surface are free of the second coating layer.

12. The system of claim 10, further comprising an epitaxy chamber to grow an epitaxial layer on the substrate after the substrate is cleaned by the processing chamber.

13. The system of claim 10, wherein the second coating layer is disposed over only a substrate contact surface of the support body.

14. The system of claim 10, wherein the second coating layer further comprises a perfluorinated film.

15. The system of claim 14, wherein the perfluorinated film comprises a self-assembled monolayer.

16. The system of claim 10, wherein the second coating layer further comprises yttrium oxyfluoride, wherein an individual concentration of yttrium atoms, oxygen atoms, and fluorine atoms in the yttrium oxyfluoride coating is within a range of 25 atomic % to 40 atomic %.

17. A method of forming a surface coating on a support body and a stem of a processing chamber, comprising:

depositing a first material over an entire upper surface of the support body and an outer stem surface of the stem, thereby forming a first coating layer, the first material including at least one of a metal-containing material or alloy, the stem being coupled to the support body and extending through an opening in a bottom of the processing chamber; and

depositing a second material over the first coating layer only over a portion of the upper surface of the support body, thereby forming a second coating layer, wherein the second material is non-metal.

18. The method of claim 17, wherein the upper surface extends a first radial distance from a center of the support body, and wherein the second coating layer extends a second radial distance less than the first radial distance from the center of the support body.

19. The method of claim 17, further comprising depositing the first material over an entirety of the support body.

20. The method of claim 17, wherein the first coating layer comprises electroless nickel plating, and wherein the second coating layer comprises silicon carbide.